ORDER NO. SD8103-1842

# Service Manual

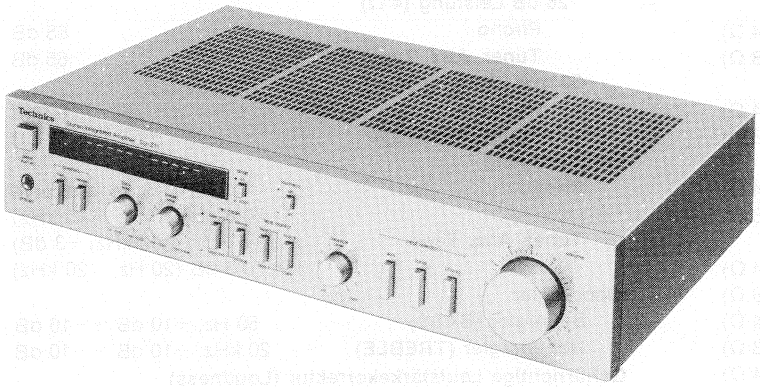
Stereo Integrated Amplifier

# SU-Z11

(E),(EG),(EK),(EF),
(EH),(EB),(XA),(XL)

# SU-Z11(K)

(E),(EG),(EH)



*The cabinet and front panel are available in black color and silver types.
* The black type model is provided with (K) in the Service Manual.

Areas

* [E] is available in Switzerland and Scandinavia.
* [EG] is available in F.R. Germany.
* [EK] is available in United Kingdom.
* [EF] is available in France.
* [EH] is available in Holland.
* [EB] is available in Belgium.
* [XA] is available in East South Asia, Oceania, Africa, Middle Near East and Central South America.
* [XL] is available in Australia.

English

## Specifications (DIN 45 500)

(Specifications are subject to change without notice for further improvement.)

### ■ AMPLIFIER SECTION

| | |
|---|---|
| **20 Hz~20 kHz continuous power output** | |
| **both channels driven** | 2 × 25W (4Ω) |
| | 2 × 25W (8Ω) |
| **40 Hz~16 kHz continuous power output** | |
| **both channels driven** | 2 × 25W (4Ω) |
| | 2 × 25W (8Ω) |
| **1 kHz continuous power output** | |
| **both channels driven** | 2 × 30W (4Ω) |
| | 2 × 30W (8Ω) |
| **Total harmonic distortion** | |
| **rated power at 20 Hz~20 kHz** | 0.08% (4Ω) |
| | 0.04% (8Ω) |
| **rated power at 40 Hz~16 kHz** | 0.08% (4Ω) |
| | 0.04% (8Ω) |
| **rated power at 1 kHz** | 0.08% (4Ω) |
| | 0.04% (8Ω) |
| **half power at 20 Hz~20 kHz** | 0.03% (8Ω) |
| **half power at 1 kHz** | 0.005% (8Ω) |
| **−26 dB power at 1 kHz** | 0.15% (4Ω) |
| **50 mW power at 1 kHz** | 0.15% (4Ω) |
| **Intermodulation distortion** | |
| **rated power at 250 Hz: 8 kHz=4:1, 4Ω** | 0.08% |
| **rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω** | 0.04% |
| **Power bandwidth** | |
| **both channels driven, −3 dB** | 10 Hz~25 kHz (4Ω) |
| | 10 Hz~30 kHz (8Ω) |
| **Residual hum and noise** | 0.6 mV |
| **Damping factor** | 20 (4Ω), 40 (8Ω) |
| **Input sensitivity and impedance** | |
| **PHONO** | 2.5 mV/47kΩ |
| **TUNER, AUX** | 150 mV/22kΩ |
| **TAPE 2** | 150 mV/22kΩ |
| **TAPE 1 REC/PLAY** | 180 mV/27kΩ |
| **PHONO maximum input voltage (1 kHz, RMS)** | 150 mV |
| **S/N** | |
| **rated power (4Ω)** | |
| **PHONO** | 72 dB (IHF, A: 80 dB) |
| **TUNER, AUX, TAPE** | 86 dB (IHF, A: 97 dB) |
| **−26 dB power (4Ω)** | |
| **PHONO** | 65 dB |
| **TUNER, AUX, TAPE** | 65 dB |
| **50 mW power (4Ω)** | |
| **PHONO** | 62 dB |
| **TUNER, AUX, TAPE** | 62 dB |
| **Frequency response** | |
| **PHONO** | RIAA standard curve |
| | ±0.8 dB (30 Hz~15 kHz) |
| **TUNER, AUX, TAPE** | 5 Hz~100 kHz (−3 dB) |
| | +0, −0.3 dB (20 Hz~20 kHz) |
| **Tone controls** | |
| **BASS** | 50 Hz, +10 dB~ −10 dB |
| **TREBLE** | 20 kHz, +10 dB~ −10 dB |
| **Loudness control (volume at −30 dB)** | 50 Hz, +9 dB |
| **Output voltage and impedance** | |
| **REC OUT** | 150 mV |
| **TAPE 1 REC/PLAY** | 30 mV/82kΩ |
| **Channel balance, AUX 250 Hz~6,300 Hz** | ±1.0 dB |
| **Channel separation, AUX 1 kHz** | 50 dB |
| **Headphones output level and impedance** | 340 mV/330Ω |
| **Load impedance** | |
| **MAIN or REMOTE** | 4Ω~16Ω |
| **MAIN and REMOTE** | 8Ω~16Ω |

### ■ GENERAL

| | |
|---|---|
| **Power consumption** | 260W |
| **Power supply** | AC 50 Hz/60 Hz, 110V/120V/220V/240V |
| **Dimensions (W×H×D)** | 430 × 86 × 288 mm |
| | (16-15/16" × 3-3/8" × 11-11/32") |
| **Weight** | 5.1 kg |
| | (11.2 lb.) |

**Note:**
Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

Deutsch

# TECHNISCHE DATEN (Spezifikationen Können infolge von Verbesserungen ohne Ankündigung geändert werden.)

## (DIN 45 500)

### ■ VERSTÄRKERTEIL

**Dauerton-Ausgangsleistung bei 20 Hz ~ 20 kHz**
**beide Kanäle ausgesteuert** 2 × 25W (4 Ω)
2 × 25W (8 Ω)
**Dauerton-Ausgangsleistung bei 40 Hz ~ 16 kHz**
**beide Kanäle ausgesteuert** 2 × 25W (4 Ω)
2 × 25W (8 Ω)
**Dauerton-Ausgangsleistung bei 1 kHz**
**beide Kanäle ausgesteuert** 2 × 30W (4 Ω)
2 × 30W (8 Ω)
**Gesamtklirrfaktor**
**Nennleistung bei 20 Hz ~ 20 kHz** 0,08% (4 Ω)
0,04% (8 Ω)
**Nennleistung bei 40 Hz ~ 16 kHz** 0,08% (4 Ω)
0,04% (8 Ω)
**Nennleistung bei 1 kHz** 0,08% (4 Ω)
0,04% (8 Ω)
**halbe Nennleistung bei 20 Hz ~ 20 kHz** 0,03% (8 Ω)
**halbe Nennleistung bei 1 kHz** 0,005% (8 Ω)
**−26 dB Leistung bei 1 kHz** 0,15% (4 Ω)
**50 mW Leistung bei 1 kHz** 0,15% (4 Ω)
**Intermodulationsfaktor**
**Nennleistung bei 250 Hz: 8 kHz = 4:1, 4 Ω** 0,08%
**Nennleistung bei 60 Hz: 7 kHz = 4:1, nach SMPTE, 8 Ω** 0,04%
**Leistungsbandbreite**
**beide Kanäle ausgesteuert bei −3 dB**
10 Hz ~ 25 kHz (4 Ω)
10 Hz ~ 30 kHz (8 Ω)
**Restbrumm und Geräusch** 0,6 mV
**Dämpfungsfaktor** 20 (4 Ω), 40 (8 Ω)
**Eingangsempfindlichkeit und -impedanz**
**Phono** 2,5 mV/47 kΩ
**Tuner, Aux** 150 mV/22 kΩ
**Tape 2** 150 mV/22 kΩ
**Tape 1 Aufnahme/Wiedergabe (TAPE 1 REC/PLAY)** 180 mV/27 kΩ
**Maximale TA-Eingangsspannung (1 kHz, eff.)** 150 mV

**Geräuschabstand**
**Nennleistung (4 Ω)**
**Phono** 72 dB (nach IHF, A: 80 dB)
**Tuner, Aux, Tape** 86 dB (nach IHF, A: 97 dB)
**−26 dB Leistung (4 Ω)**
**Phono** 65 dB
**Tuner, Aux, Tape** 65 dB
**50 mW Leistung (4 Ω)**
**Phono** 62 dB
**Tuner, Aux, Tape** 62 dB
**Frequenzgang**
**Phono** RIAA-Standardkurve
±0,8 dB (30 Hz ~ 15 kHz)
**Tuner, Aux, Tape** 5 Hz ~ 100 kHz( −3 dB)
+0, −0,3 dB (20 Hz ~ 20 kHz)
**Klangregler**
**Baßregler (BASS)** 50 Hz, +10 dB ~ −10 dB
**Höhenregler (TREBLE)** 20 kHz, +10 dB ~ −10 dB
**Gehörrichtige Lautstärkekorrektur (Loudness)**
**(bei −30 dB Ausgangsleistung)** 50 Hz, +9 dB
**Ausgangsspannung und-impedanz**
**Aufnahmeausgang (REC OUT)** 150 mV
**Tape 1 Aufnahme/Wiedergabe (TAPE 1 REC/PLAY)** 30 mV/82 kΩ
**Kanalabweichung (Aux, 250 Hz ~ 6300 Hz)** ±1,0 dB
**Übersprechdämpfung (Aux, 1 kHz)** 50 dB
**Kopfhörerpegel und -impedanz** 340 mV/330 Ω
**Lautsprecherimpedanz**
**MAIN oder REMOTE** 4 Ω ~ 16 Ω
**MAIN und REMOTE** 8 Ω ~ 16 Ω

### ■ ALLGEMEINE DATEN

**Leistungsaufnahme** 260 W
**Netzspannung**
Wechselstrom 50 Hz/60 Hz, 110V/120V/220V/240V
**Abmessungen (B×H×T)** 430 × 86 × 288 mm
**Gewicht** 5,1 kg

**Bemerkung:**
Der Gesamtklirrfaktor wurde mit einem digitalen Rauschspektrometer (Anlage H.P. 3045) gemessen.

Français

# CARACTERSTIQUES (Sujet á changement sans préaris.)

## (DIN 45 500)

### ■ SECTION AMPLIFICATEUR

**Puissance de sortie continue de 20 Hz~20 kHz,**
**les deux canaux en circuit** 2 × 25W (4Ω)
2 × 25W (8Ω)
**Puissance de sortie continue de 40 Hz~16 kHz,**
**les deux canaux en circuit** 2 × 25W (4Ω)
2 × 25W (8Ω)
**Puissance de sortie continue à 1 kHz**
**les deux canaux en circuit** 2 × 30W (4Ω)
2 × 30W (8Ω)
**Distorsion harmonique totale**
**à puissance nominale (20 Hz~20 kHz)** 0,08% (4Ω)
0,04% (8Ω)
**à puissance nominale (40 Hz~16 kHz)** 0,08% (4Ω)
0,04% (8Ω)
**à puissance nominale (1 kHz)** 0,08% (4Ω)
0,04% (8Ω)
**à demi-puissance (20 Hz~20 kHz)** 0,03% (8Ω)
**à demi-puissance (1 kHz)** 0,005% (8Ω)
**puissance de −26 dB à 1 kHz** 0,15% (4Ω)
**puissance de 50 mW à 1 kHz** 0,15% (4Ω)

**Distorsion d'intermodulation**
**à puissance nominale à 250 Hz: 8 kHz=4:1, 4Ω** 0,08%
**à puissance nominale à 60 Hz: 7 kHz=4:1, SMPTE, 8Ω** 0,04%
**Réponse de fréquences**
**les deux canaux en circuit, −3 dB** 10 Hz~25 kHz (4Ω)
10 Hz~30 kHz (8Ω)
**Bruit et ronflement résiduels** 0,6 mV
**Coefficient d'amortissement** 20 (4Ω), 40 (8Ω)
**Sensibilité et impédance d'entrée**
**PHONO** 2,5 mV/47kΩ
**SYNTONISATEUR, AUX (TUNER, AUX)** 150 mV/22kΩ
**BANDE 2 (TAPE 2)** 150 mV/22kΩ
**BANDE 1, ENREGISTREMENT/LECTURE (TAPE 1 REC/PLAY)** 180 mV/27kΩ
**PHONO (tension d'entrée maximum, 1 kHz RMS)** 150 mV
**Signal/Bruit**
**à puissance nominale (4Ω)**
**PHONO** 72 dB (IHF, A: 80 dB)
**SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE)** 86 dB (IHF, A: 97 dB)

**puissance de −26 dB (4Ω)**
**PHONO** 65 dB
**SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE)** 65 dB
**puissance de 50 mW (4Ω)**
**PHONO** 62 dB
**SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE)** 62 dB
**Réponse de fréquence**
**PHONO** Courbe nominale RIAA ±0,8 dB (30 Hz~15 kHz)
**SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE)** 5 Hz~100 kHz (−3 dB) +0, −0,3 dB (20 Hz~20 kHz)
**Réglage de la tonalité**
**BASSES (BASS)** 50 Hz, +10 dB~ −10 dB
**AIGUS (TREBLE)** 20 kHz, +10 dB~ −10 dB
**Compensateur physiologique (volume à −30 dB)** 50 Hz, +9 dB
**Tension de sortie et impédance**
**SORTIE ENREGISTREMENT (REC OUT)** 150 mV
**ENREGISTREMENT/LECTURE BANDE 1 (TAPE 1 REC/PLAY)** 30 mV/82kΩ
**Equilibrage des canaux, AUX 250 Hz~6 300 Hz** ±1,0 dB
**Séparation des canaux, AUX 1 kHz** 50 dB
**Niveau de sortie des casques et impédance** 340 mV/330Ω
**Impédance de charge**
**PRINCIPALE ou AUXILIAIRE (MAIN or REMOTE)** 4Ω~16Ω
**PRINCIPALE et AUXILIAIRE (MAIN and REMOTE)** 8Ω~16Ω

## ■ DIVERS

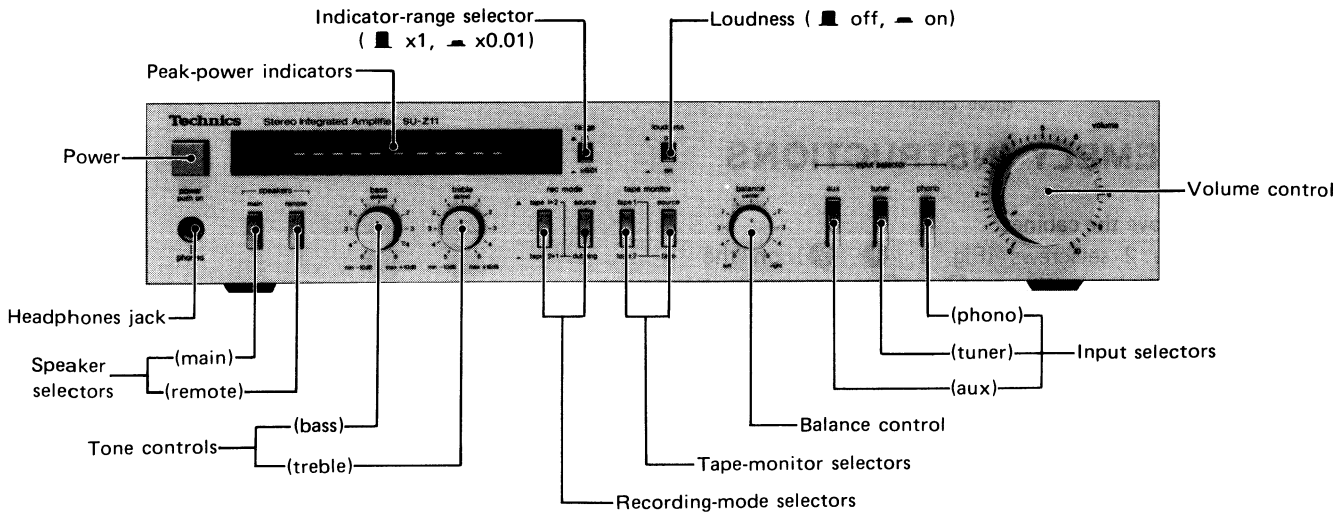
**Consommation** 260W
**Alimentation** CA 50 Hz/60 Hz, 110V/120V/220V/240V
**Dimensions (L×H×Pr)** 430 × 86 × 288 mm
**Poids** 5,1 kg

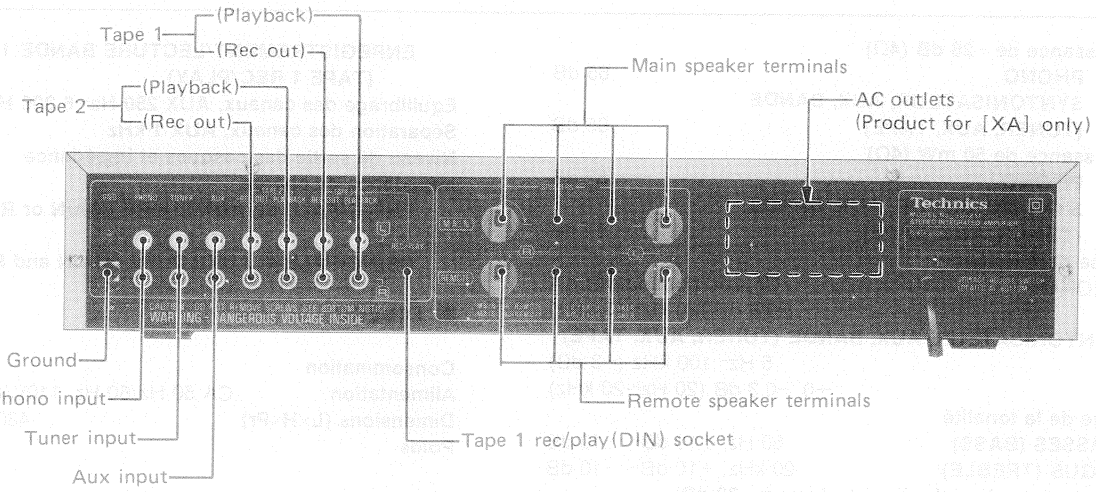
**Remarque:**
On mesure la distorsion harmonique totale au moyen d'un analyseur de spectre digital (Système H.P. 3045).

# ■ CONTENTS

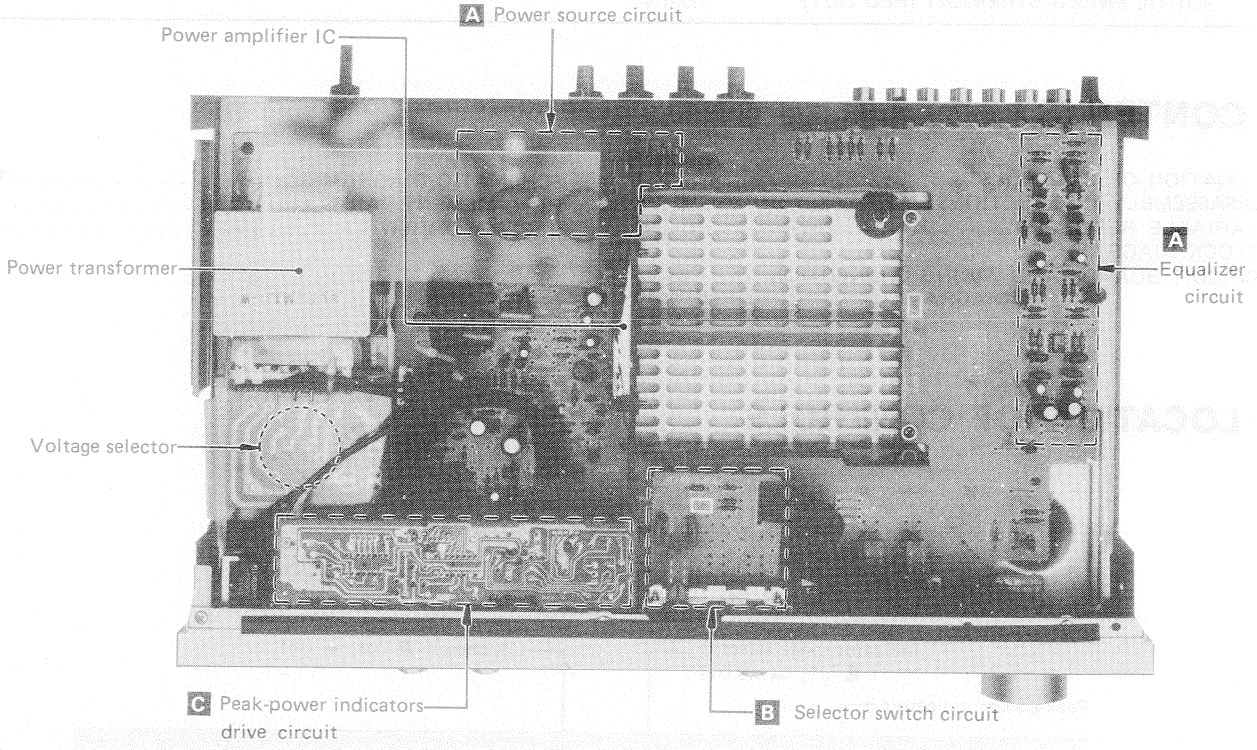

| | Page |
|---|---|
| LOCATION OF CONTROLS | 3, 4 |
| DISASSEMBLY INSTRUCTIONS | 4 ~ 6 |
| VARIABLE RESISTORS | 6 |
| BLOCK DIAGRAM | 7 |
| CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM | 8 ~ 10 |
| SCHEMATIC DIAGRAM | 11 ~ 14 |
| REPLACEMENT PARTS LIST | 15, 16 |
| EXPLODED VIEW | 17, 18 |


# ■ LOCATION OF CONTROLS






- **The products for destination [XA] is equipped with AC outlets.**



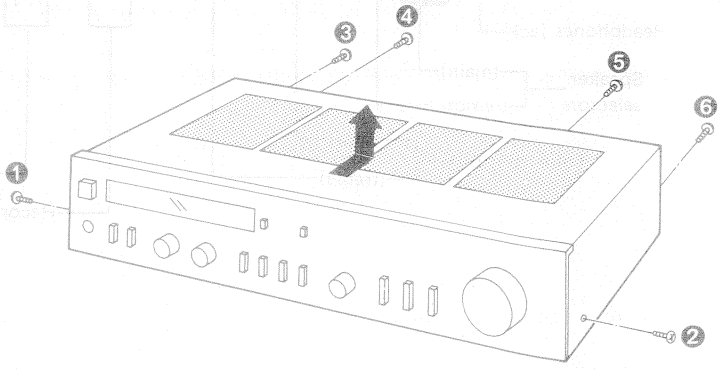

## DISASSEMBLY INSTRUCTIONS

- **How to remove the cabinet**

1. Remove the 2 setscrews (Fig. 1: ❶, ❷) on the side and 4 setscrews (Fig. 1: ❸ ~ ❻) on the back of the cabinet.
2. Remove the cabinet.

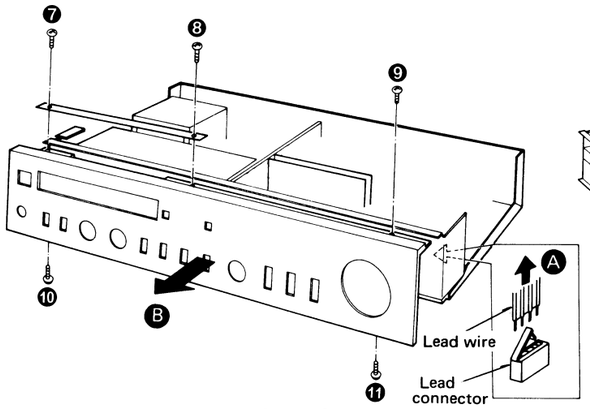
- **How to remove the main printed circuit board**

1. Remove the cabinet.
2. Remove the 5 setscrews (Fig. 2: ❼ ~ ⓫) of the front panel.
3. Open the "lead holder" of the lead connector and pull out the lead wire of the arrow Ⓐ in Fig. 2.
4. Move the front panel in the direction of the arrow Ⓑ in Fig. 2.
5. Remove the 4 setscrews (Fig. 3: ⓬ ~ ⓯) on the back of the set.

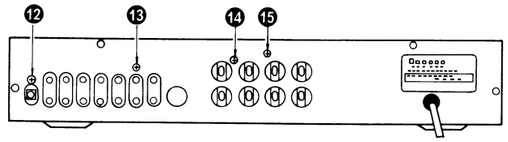



[Fig. 1]

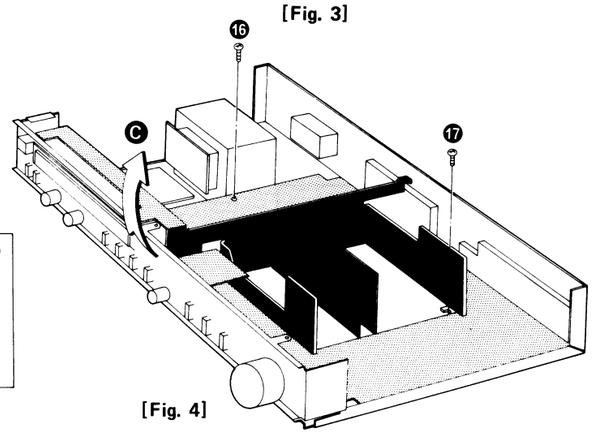
6. Remove the 2 setscrews (Fig. 4: ⑯ , ⑰ ) witch fastens the printed circuit board in the set.
7. Hold the radiator of the main printed circuit board, and lift it in the direction of the arrow Ⓒ to remove the main printed circuit board from the chassis. (Refer to Fig. 4)




[Fig. 2]



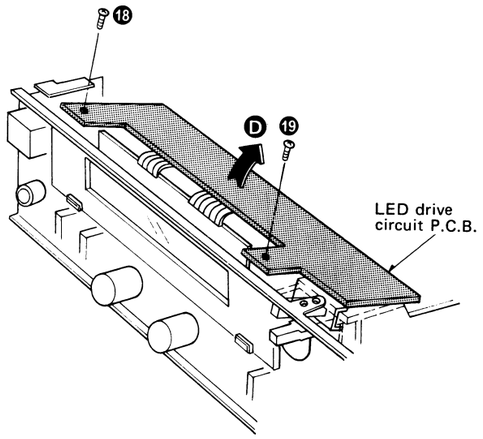

[Fig. 3]



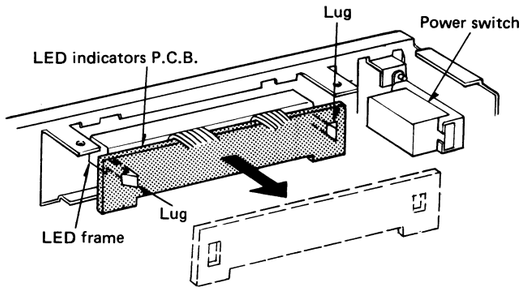

[Fig. 4]

- **How to remove the LED drive printed circuit board**

1. Remove the cabinet.
2. Remove the 2 setscrews (Fig. 5: ⑱ , ⑲ ) to detach the LED drive printed circuit board.
3. Move the LED drive printed circuit board in the direction of the arrow Ⓓ in Fig. 5.
4. Remove the 2 lugs (Fig. 6) to detach the LED indicators printed circuit board from the LED frame.



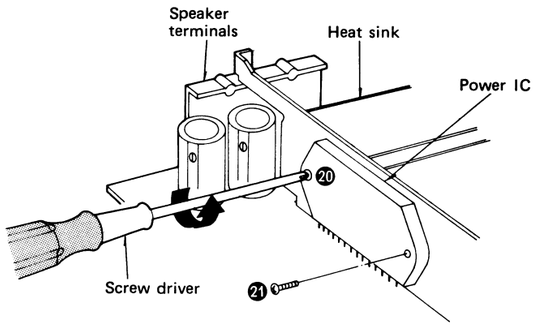

[Fig. 5]




[Fig. 6]

- **How to remove the power IC**

1. Remove the cabinet and chassis. (Refer to "How to remove the cabinet", and "How to remove the main printed circuit board".)
2. Unsolder of power IC.
3. Remove the 2 setscrews (Fig. 7: ⑳ , ㉑ ) used to secure the power IC on the heat sink, and then pull to the power IC.
4. When mounting the power IC, apply silicone compound (or equivalent heat diffuser) to the rear side of power IC, and then follow the steps 1 ~ 3 reversely.

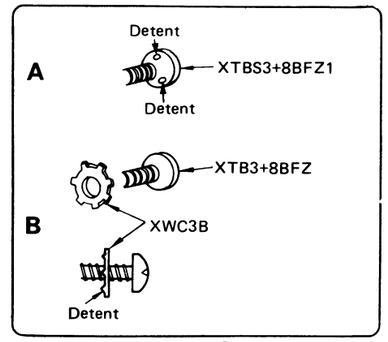



[Fig. 7]

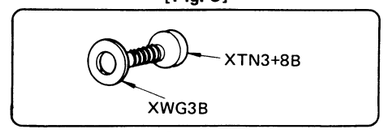


**Note 1:** Setscrews ⑫ to ⑮ are screws with detents (Part No. : XTBS3+8BFZ1) as shown in Fig. 8-A in order to make the contact of electric circuit perfect.
Take care not to max up these screws with other screws. When substituting, use a 3 x 8mm tapping screw (Part No. : XTB3+8BFZ) and toothed lock washer (Part No. : XWC3B) as shown in Fig. 8-B. The teeth of the lock washer should be positioned on the chassis side.

**Note 2:** Setscrews ⑱ and ⑲ are plain washer-attached screws (Part No. : XTW3+8H). When substituting, use a 3 x 8mm tapping screw (Part No. : XTN3+8B) and plain washer (Part No. : XWG3B) as shown in Fig. 9.




[Fig. 8]

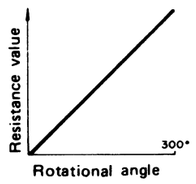



[Fig. 9]

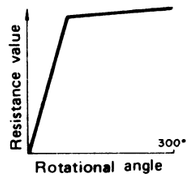
## ■ VARIABLE RESISTORS

- **Alteration of resistance values according to the rotational angles of variable resistors**

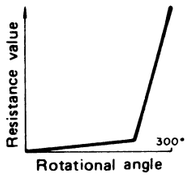
Alteration characteristics as shown below are often used for sets. All are intended to keep the frequency response of the set at optimum levels, and are used according to the types of circuits. For example, characteristic (B) is used for sound volume adjustment; (A) and (C) are for bass and treble sound quality adjustment; and (BH) or (G) is for the adjustment of sound balance between the right and left.



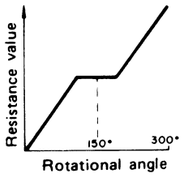

**Characteristic (B)**




**Characteristic (C)**

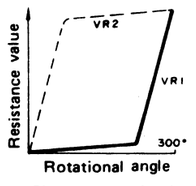



**Characteristic (A)**

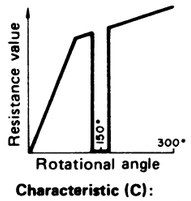



**Characteristic (G)**

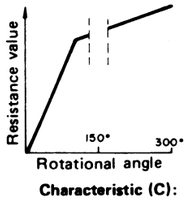
VR1 is inter locked with VR2



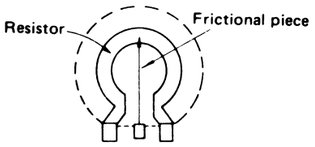

**Characteristic (BH)**

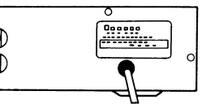


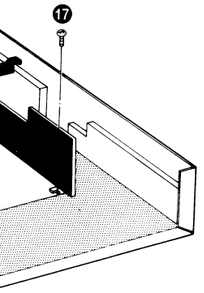

**Characteristic (C): short-circuited at center**




**Characteristic (C): opened at center**



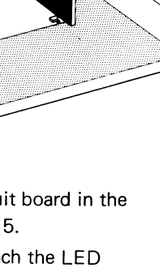





it board in the
5.
ch the LED
om the LED frame.

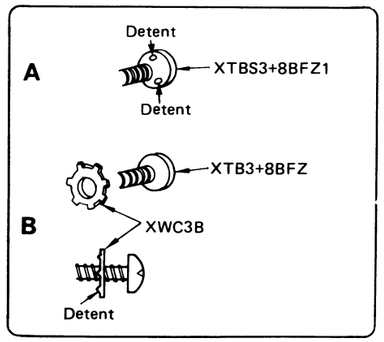



nk

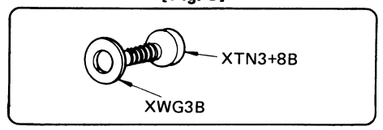



**Note 1:** Setscrews ⑫ to ⑮ are screws with detents (Part No. : XTBS3+8BFZ1) as shown in Fig. 8-A in order to make the contact of electric circuit perfect.
Take care not to max up these screws with other screws. When substituting, use a 3 x 8mm tapping screw (Part No. : XTB3+8BFZ) and toothed lock washer (Part No. : XWC3B) as shown in Fig. 8-B. The teeth of the lock washer should be positioned on the chassis side.

**Note 2:** Setscrews ⑱ and ⑲ are plain washer-attached screws (Part No. : XTW3+8H). When substituting, use a 3 x 8mm tapping screw (Part No. : XTN3+8B) and plain washer (Part No. : XWG3B) as shown in Fig. 9.




[Fig. 8]

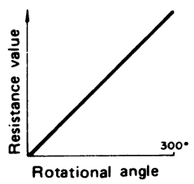



[Fig. 9]

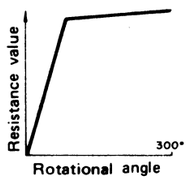
## ■ VARIABLE RESISTORS

**• Alteration of resistance values according to the rotational angles of variable resistors**

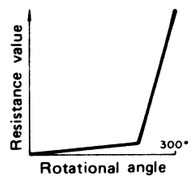
Alteration characteristics as shown below are often used for sets. All are intended to keep the frequency response of the set at optimum levels, and are used according to the types of circuits. For example, characteristic (B) is used for sound volume adjustment; (A) and (C) are for bass and treble sound quality adjustment; and (BH) or (G) is for the adjustment of sound balance between the right and left.



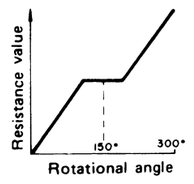

**Characteristic (B)**




**Characteristic (C)**

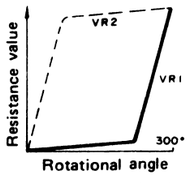



**Characteristic (A)**

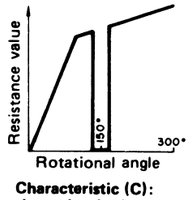



**Characteristic (G)**

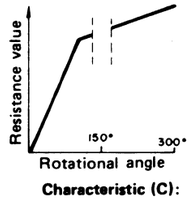
VR1 is inter locked with VR2



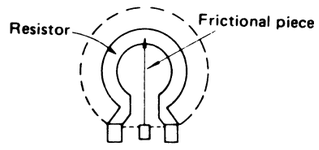

**Characteristic (BH)**



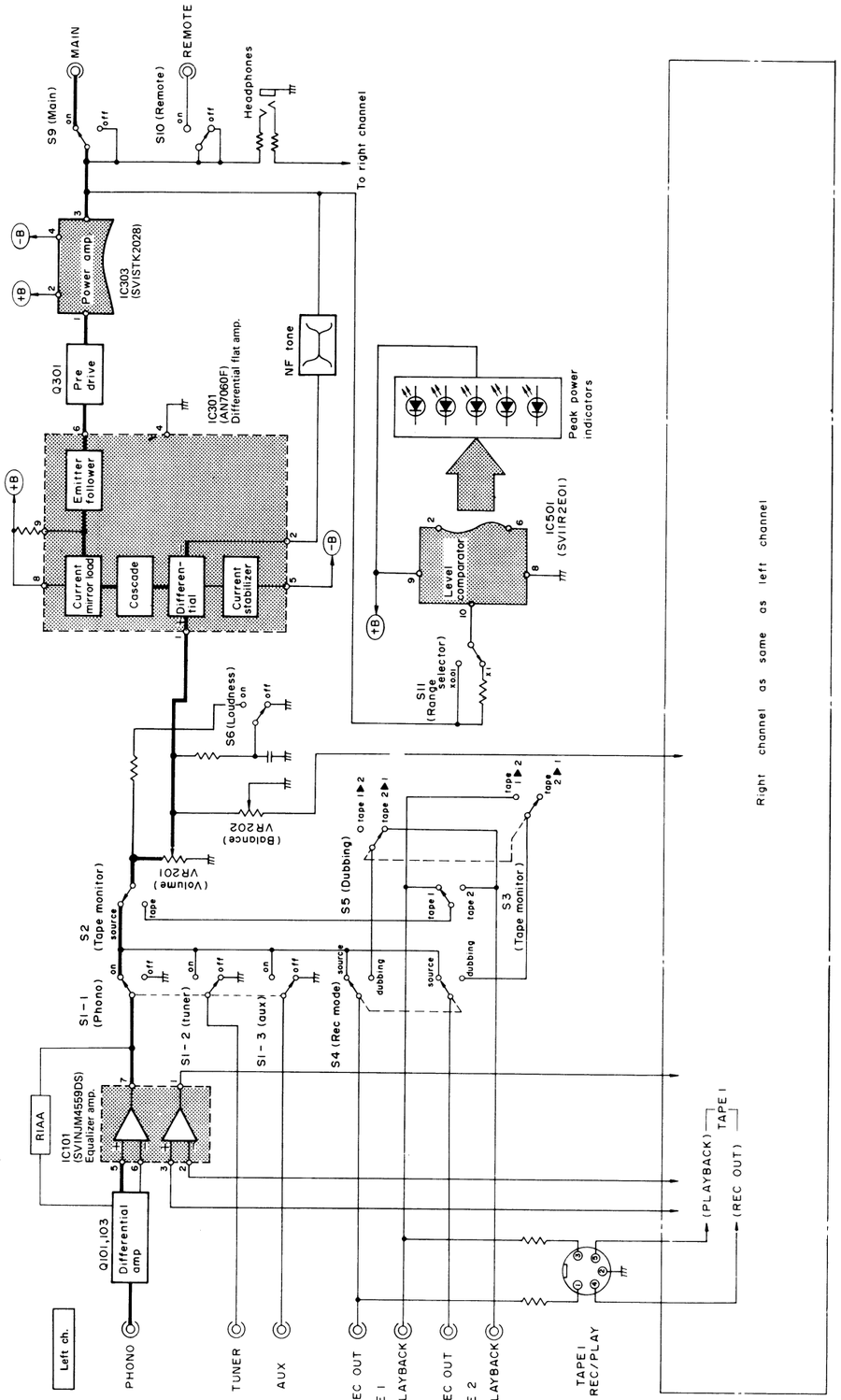

**Characteristic (C): short-circuited at center**




**Characteristic (C): opened at center**




## ■ BLOCK DIAGRAM



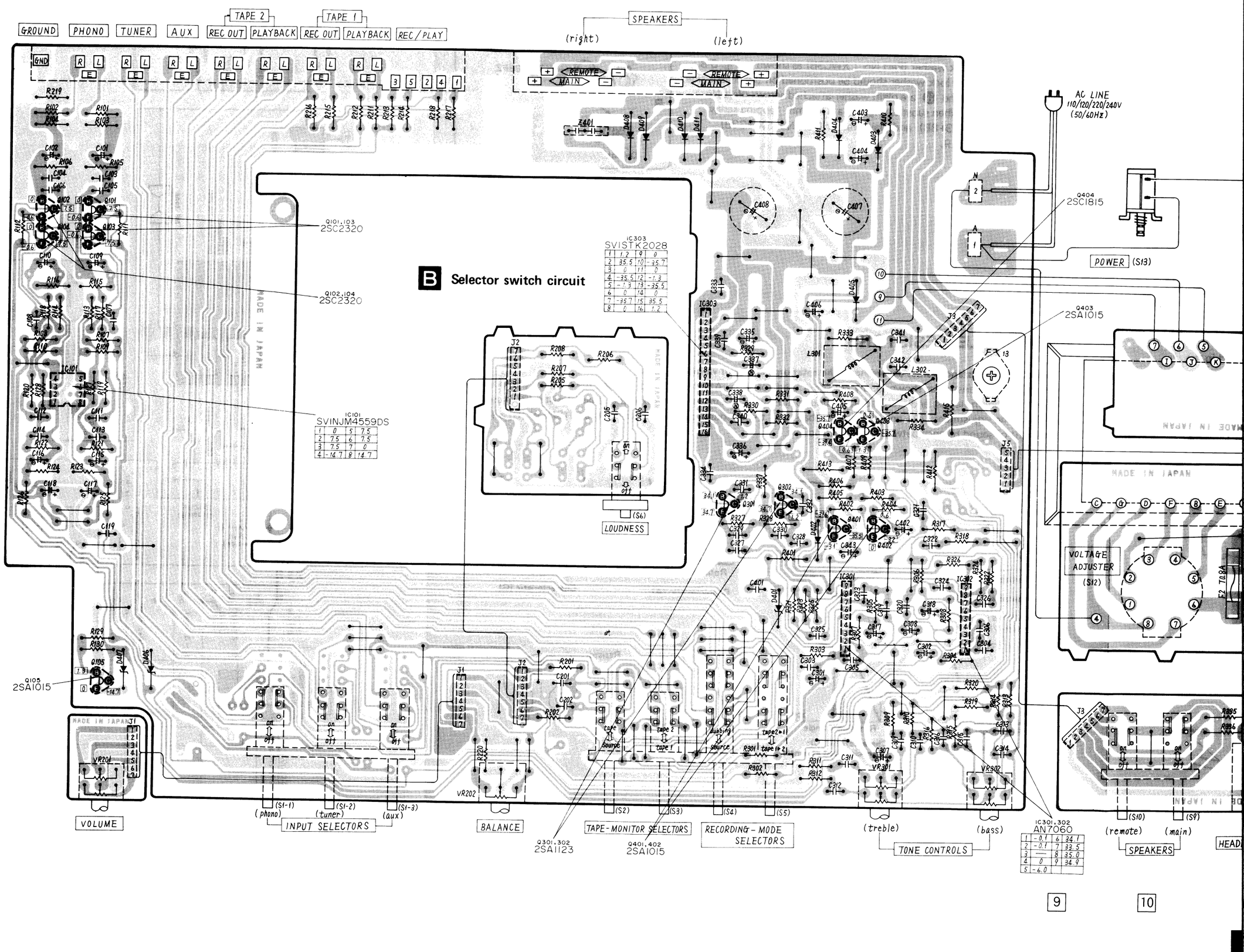
SU-Z11 SU-Z11

## ■ CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM

**A** Main printed circuit

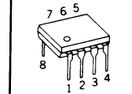
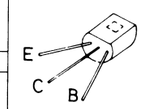
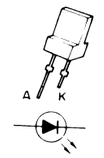
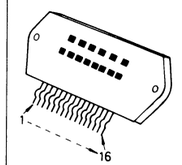
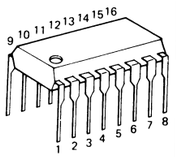
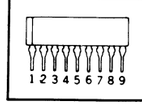
**B** Selector switch circuit

Ground (Earth) lines



Ground (Earth) lines

• Terminal guide of transistors, diodes and IC's

| SVINJM4559DS | 2SC2320L, 2SA1015, 2SA1123, 2SC1815, 2SC1384 | LN417YP, LN217RP | SVISTK2028 | SVIIR2E01 |
|---|---|---|---|---|
|  |  |  |  |  |
| AN7060F | | | | |
|  | | | | |

B Selector switch circuit

C Peak-power indicators drive circuit

# ■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

1 2 3 4 5 6 7 8 9 10

A B C D E F

## A Main printed circuit

Q101 ~ 104
2SC2320
DIFFERENTIAL

GND

PHONO (Lch)

PHONO (Rch)

R219 10

R101 390
C101 50V3.3M
R103 100K
R105 82K
C103 120P
R104 100K
R106 82K
C104 120P
R102
C102
Q101
Q103
Q102
Q104
R107 8.2K
R109 8.2K
R113 270
C107 0.01
R111 8.2K
C108
R114
C106
R112
C119 0.01
C105 68P
C109 6V33
R115 560
C110
C116
C117 16V100
C118 16V100
R116
R117 68
R119 330K
R121 27K
C111 J0.01
C113 J0.0027
R127 150K
R128
R118
R120
R122
C112
C114
C115 50V1
R125 330
R123 100K
R124
R126

IC 101
SVINJM4559DS
EQUALIZER AMP
7.5 7.5 0 14.7
-14.7 7.5 7.5 0

R201 3.9K
C201 330P
C202
J1
VR201-1 100KB (VOLUME)
VR201-2 (VOLUME)

R202

SOURCE ⟷ TAPE
SOURCE ⟷ DUBBING

(Lch)
TUNER
AUX
REC OUT
TAPE 1
PLAYBACK
REC OUT
TAPE 2
PLAYBACK
(Rch)
TUNER
AUX
REC OUT
TAPE 1
PLAYBACK
REC OUT
TAPE 2
PLAYBACK

S1-1 (PHONO) OFF ⟷ ON
S1-2 (TUNER) OFF ⟷ ON
S1-3 (AUX) OFF ⟷ ON
S2 (TAPE MONITOR)
S3 (TAPE SELECTOR)
S4 (REC MODE)
S5 (DUBBING)

TAPE 1 ⟷ TAPE 2
TAPE 1 ▶2 ⟷ TAPE 2 ▶1

R211 22K
R212
R215 330K
R216
R217 120K
R218
R213 2.2K
R214
DIN
REC/PLAY

## B Selector switch circuit

R220 10
R207
R205 18K
S6 (LOUDNESS)
off ⟷ on
C205 0.056
C206
R208
R206
J2
(BALANCE) VR202 100KG
C301 50V3.3M
R301 1K

IC 301 AN7060F
DIFFERENTIAL AMP
C305 82P
R303 120K
C303 39P
C307 6V33
VR301-1 100KC (TREBLE)
C311 0.022
R311 1K
C317 16V10
R307 39K
R305 39K
C309 0.0027
R309 4.7K
C313 0.018
VR302-1 100KC (BASS)
C315 0.1
C319 2P
C321 15P
R313 22K
C323 33P
R317 12K
R319 820
C343 50V100
Q301, 302
2SA1123
PRE DRIVE

IC 302 AN7060F
DIFFERENTIAL AMP
-0.1 -0.1 0 0 -6.0 34.1 33.5 35.0 34.9
C306
C304
R304
C308
R308
R306
C310
R310
C312
VR301-2 (TREBLE)
C314
R314
C316
R316 (BASS) VR302-2
C318
C320
C322
C324
R318
R320
C326
R322
R326
C328
R328
C330
Q302
R324
C332
D401
MA1062
D402
D404, 405
SVDSRIK2
C401 0.01
R401 1/2 3.3K
Q401
Q105
2SA1015
REGULATOR
Q401 ~ 403
2SA1015
MUTING
D406, 407
MA1150
Q404
2SC1815
MUTING
Q402
Q403
D406
D407
R129 15K
R130 18K
C402 50V47
R402 2.2K
R403 470
R405 33K
R404 10K
R406 220K
R407 47K
R408 5.6K

R325 2.2K
R327 4.47
C329
Q303
C331 3P
R323 560
C333 100P
C325 470P
R321 1.8K
C334

●Power source circuit of [XL] and [XA] areas.

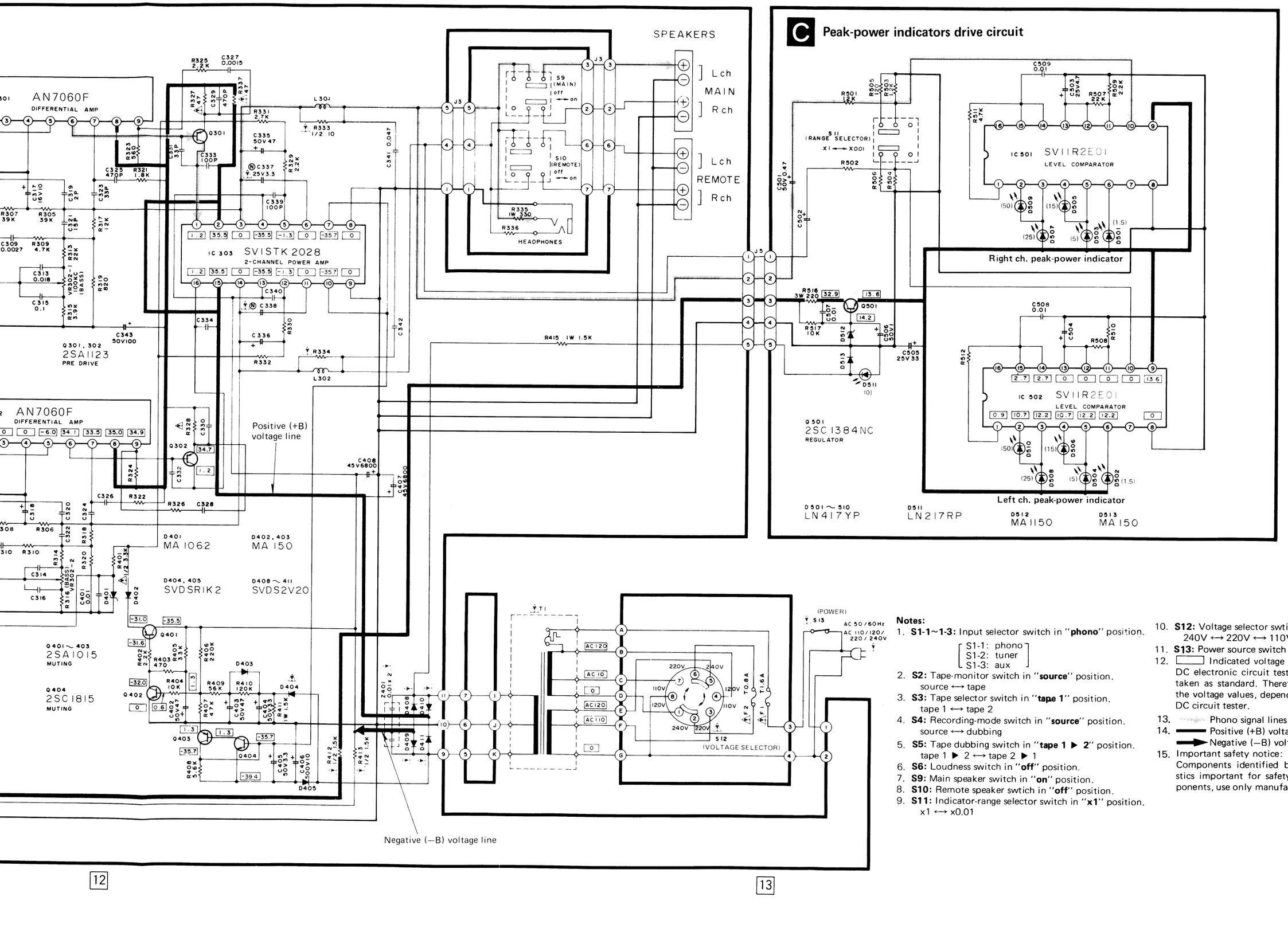
Product for Australia [XL] only

S13
BRN
YEL/GRN
BLU
AC 50/60Hz

Product for East South Asia, Oceania, Africa, Middle Near East and Central South America [XA].

S13
SWITCHED
UNSWITCHED
AC 50/60Hz

10 11 12 13 14 15 16 17 18 19




**Notes:**

1. **S1-1~1-3:** Input selector switch in "**phono**" position.
   [ S1-1: phono
   S1-2: tuner
   S1-3: aux ]
2. **S2:** Tape-monitor switch in "**source**" position.
   source ⟷ tape
3. **S3:** Tape selector switch in "**tape 1**" position.
   tape 1 ⟷ tape 2
4. **S4:** Recording-mode switch in "**source**" position.
   source ⟷ dubbing
5. **S5:** Tape dubbing switch in "**tape 1 ▶ 2**" position.
   tape 1 ▶ 2 ⟷ tape 2 ▶ 1
6. **S6:** Loudness switch in "**off**" position.
7. **S9:** Main speaker switch in "**on**" position.
8. **S10:** Remote speaker swtich in "**off**" position.
9. **S11:** Indicator-range selector switch in "**x1**" position.
   x1 ⟷ x0.01
10. **S12:** Voltage selector swtich in "**240V**" position.
    240V ⟷ 220V ⟷ 110V ⟷ 120V
11. **S13:** Power source switch in "**on**" position.
12. ▭ Indicated voltage values are the standard values for the DC electronic circuit tester (high impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
13. ⋯⋯ Phono signal lines of left channel
14. ▬▬ Positive (+B) voltage lines.
    ▬▶ Negative (—B) voltage.
15. Important safety notice:
    Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

# ■ REPLACEMENT PARTS LIST ·····Electric Parts

**Notes:** 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

| Ref. No. | | Part No. | Part Name & Description |
|---|---|---|---|
| **INTEGRATED CIRCUIT** | | | |
| IC101 | | SVINJM4559DD | IC, Equalizer Amplifier |
| IC301, 302 | | AN7060F | IC, Differential Amplifier |
| IC303 | | SVISTK2028 | IC, Power Amplifier |
| IC501, 502 | | SVIIR2E01 | IC, LED Level Comparator |
| **TRANSISTORS** | | | |
| Q101~104 | | 2SC2320L–F | Transistor, Differential |
| Q105 | | 2SA1015–Y | Transistor, Regulator (use in ranks O or Y) |
| Q301, 302 | | 2SA1123–R | Transistor, Pre Drive (use in ranks Q, R or S) |
| Q401~403 | | 2SA1015–Y | Transistor, Regulator (use in ranks O or Y) |
| Q404 | | 2SC1815–Y | Transistor, Regulator (use in ranks O or Y) |
| Q501 | | **2SC1384AR** | Transistor, Regulator |
| **DIODES** | | | |
| D401 | | **RVDRD6R2EB** | Diode, 6.2V Zener |
| D402, 403 | | **MA162A** | Diode, Switching (Product Part No. MA150) |
| D404, 405 | ⚠ | **SVDSR1K2** | Diode, Rectifier |
| D406, 407 | | MA1150A | Diode, 5V Zener |
| D408~411 | ⚠ | SVDS2V20 | Diode, Rectifier |
| D501~510 | | LN417YP | Light Emitting Diode, Yellow |
| D511 | | LN217RP | Light Emitting Diode, Red |
| D512 | | MA1150A | Diode, 5V Zener |
| **COILS and TRANSFORMERS** | | | |
| L301, 302 | | SLQY15G–30 | Coil, Choke |
| T1 | ⚠ | SLT5M137–W | Power Transformer |
| **VARIABLE RESISTORS** | | | |
| VR201 | | EWJGFA066B15 | Volume Control 100kΩ (B) |
| VR202 | | EWHHMA531G15 | Balance Control 100kΩ (G) |
| VR301 | | EWJFCO066C15 | Treble Control 100kΩ (C) |
| VR302 | | EWJFCY066530 | Bass Control 100kΩ (C) |
| **FUSES** | | | |
| F1 | ⚠ | XBA2C16TRO | Fuse, T1.6A 250V |
| F2 | ⚠ | XBA2C08TRO | Fuse, T0.8A 250V |
| **COMPONENT COMBINATIONS** | | | |
| Z401 | | SXRFS203ZSM | Component Combination 0.01μF x 2 |
| **SWITCHES** | | | |
| S1 | | SSH389 | Switch, Input Selector |
| S2~5 | | SSH439 | Switch, Tape Selector |
| S6 | | SSH193 | Switch, Loudness |
| S9, 10 | | SSH277 | Switch, Speaker Selector |
| S11 | ⚠ | ESE37219 | Switch, Voltage Selector |
| S12 | | SSH167 | Switch, Indicator-range Selector |
| S13 | ⚠ | ESB90619A | Switch, Power Source |
| **RESISTORS** | | | |
| R101, 102 | | **ERD25FJ391** | Carbon, 390Ω, 1/4W, ±5% |
| R103, 104 | | **ERD25TJ104** | Carbon, 100kΩ, 1/4W, ±5% |
| R105, 106 | | **ERD25TJ823** | Carbon, 82kΩ, 1/4W, ±5% |
| R107, 108 | | **ERD25FJ822** | Carbon, 8.2kΩ, 1/4W, ±5% |
| R109, 110 | | **ERD25FJ822** | Carbon, 8.2kΩ, 1/4W, ±5% |
| R111, 112 | | **ERD25FJ822** | Carbon, 8.2kΩ, 1/4W, ±5% |
| R113, 114 | | **ERD25FJ271** | Carbon, 270Ω, 1/4W, ±5% |
| R115, 116 | | **ERD25FJ561** | Carbon, 560Ω, 1/4W, ±5% |
| R117, 118 | | **ERD25FJ680** | Carbon, 68Ω, 1/4W, ±5% |
| R119, 120 | | **ERD25TJ334** | Carbon, 330kΩ, 1/4W, ±5% |
| R121, 122 | | **ERD25TJ273** | Carbon, 27kΩ, 1/4W, ±5% |
| R123, 124 | | **ERD25TJ104** | Carbon, 100kΩ, 1/4W, ±5% |
| R125, 126 | | **ERD25FJ331** | Carbon, 330Ω, 1/4W, ±5% |
| R127, 128 | | **ERD25TJ154** | Carbon, 150kΩ, 1/4W, ±5% |
| R129 | | **ERD25TJ153** | Carbon, 15kΩ, 1/4W, ±5% |
| R130 | | **ERD25TJ183** | Carbon, 18kΩ, 1/4W, ±5% |
| R201, 202 | | **ERD25FJ392** | Carbon, 3.9kΩ, 1/4W, ±5% |
| R203, 204 | | **ERD25TJ824** | Carbon, 820kΩ, 1/4W, ±5% |
| R205, 206 | | **ERD25TJ183** | Carbon, 18kΩ, 1/4W, ±5% |
| R207, 208 | | **ERD25TJ473** | Carbon, 47kΩ, 1/4W, ±5% |
| R211, 212 | | **ERD25FJ222** | Carbon, 2.2kΩ, 1/4W, ±5% |
| R213, 214 | | **ERD25FJ222** | Carbon, 2.2kΩ, 1/4W, ±5% |
| R215, 216 | | **ERD25TJ394** | Carbon, 390kΩ, 1/4W, ±5% |
| R217, 218 | | **ERD25TJ124** | Carbon, 120kΩ, 1/4W, ±5% |
| R219, 220 | | **ERD25FJ100** | Carbon, 10Ω, 1/4W, ±5% |

| Ref. No. | | Part No. | Part Name & Description |
|---|---|---|---|
| R301, 302 | | **ERD25FJ102** | Carbon, 1kΩ, 1/4W, ±5% |
| R303, 304 | | **ERD25TJ124** | Carbon, 120kΩ, 1/4W, ±5% |
| R305, 306 | | **ERD25TJ393** | Carbon, 39kΩ, 1/4W, ±5% |
| R307, 308 | | **ERD25TJ393** | Carbon, 39kΩ, 1/4W, ±5% |
| R309, 310 | | **ERD25FJ472** | Carbon, 4.7kΩ, 1/4W, ±5% |
| R311, 312 | | **ERD25FJ102** | Carbon, 1kΩ, 1/4W, ±5% |
| R313, 314 | | **ERD25TJ223** | Carbon, 22kΩ, 1/4W, ±5% |
| R315, 316 | | **ERD25FJ392** | Carbon, 3.9kΩ, 1/4W, ±5% |
| R317, 318 | | **ERD25TJ123** | Carbon, 12kΩ, 1/4W, ±5% |
| R319, 320 | | **ERD25FJ681** | Carbon, 680Ω, 1/4W, ±5% |
| R321, 322 | | **ERD25FJ182** | Carbon, 1.8kΩ, 1/4W, ±5% |
| R323, 324 | | **ERD25FJ561** | Carbon, 560Ω, 1/4W, ±5% |
| R325, 326 | | **ERD25FJ222** | Carbon, 2.2kΩ, 1/4W, ±5% |
| R327, 328 | ⚠ | **ERD25FJ470** | Carbon, 47Ω, 1/4W, ±5% |
| R329, 330 | | **ERD25FJ222** | Carbon, 2.2kΩ, 1/4W, ±5% |
| R331, 332 | | **ERD25FJ272** | Carbon, 2.7kΩ, 1/4W, ±5% |
| R333, 334 | ⚠ | **ERD50FJ100** | Carbon, 10Ω, 1/2W, ±5% |
| R335, 336 | | ERG1ANJ331 | Metal Oxide, 330Ω, 1W, ±5% |
| R337 | ⚠ | **ERD25FJ470** | Carbon, 47Ω, 1/4W, ±5% |
| R401 | ⚠ | **ERD50FJ332** | Carbon, 3.3kΩ, 1/2W, ±5% |
| R402 | | **ERD25FJ222** | Carbon, 2.2kΩ, 1/4W, ±5% |
| R403 | | **ERD25FJ471** | Carbon, 470Ω, 1/4W, ±5% |
| R404 | | **ERD25FJ103** | Carbon, 10kΩ, 1/4W, ±5% |
| R405 | | **ERD25TJ333** | Carbon, 33kΩ, 1/4W, ±5% |
| R406 | | **ERD25TJ224** | Carbon, 220kΩ, 1/4W, ±5% |
| R407 | | **ERD25TJ473** | Carbon, 47kΩ, 1/4W, ±5% |
| R408 | | **ERD25FJ562** | Carbon, 5.6kΩ, 1/4W, ±5% |
| R409 | | **ERD25TJ563** | Carbon, 56kΩ, 1/4W, ±5% |
| R410 | | **ERD25TJ124** | Carbon, 120kΩ, 1/4W, ±5% |
| R411 | | ERG1ANJ152 | Metal Oxide, 1.5kΩ, 1W, ±5% |
| R412, 413 | ⚠ | **ERD50FJ152** | Carbon, 1.5kΩ, 1/2W, ±5% |
| R415 | | ERG1ANJ152 | Metal Oxide, 1.5kΩ, 1W, ±5% |
| R501, 502 | | **ERD25TJ123** | Carbon, 12kΩ, 1/4W, ±5% |
| R503, 504 | | **ERD25FJ122** | Carbon, 1.2kΩ, 1/4W, ±5% |
| R505, 506 | | **ERD25FJ121** | Carbon, 120Ω, 1/4W, ±5% |
| R507, 508 | | **ERD25TJ223** | Carbon, 22kΩ, 1/4W, ±5% |
| R509, 510 | | **ERD25FJ222** | Carbon, 2.2kΩ, 1/4W, ±5% |
| R511, 512 | | **ERD25FJ472** | Carbon, 4.7kΩ, 1/4W, ±5% |
| R516 | | ERG3ANJ221 | Metal Oxide, 220Ω, 3W, ±5% |
| R517 | | **ERD25FJ103** | Carbon, 10kΩ, 1/4W, ±5% |
| **CAPACITORS** | | | |
| C101, 102 | | **ECEA50M3R3R** | Electrolytic, 3.3μF, 50V, |
| C103, 104 | | ECCD1H121K | Ceramic, 120pF, 50V, ±10% |
| C105, 106 | | ECCD1H680K | Ceramic, 68pF, 50V, ±10% |
| C107, 108 | | ECKD1H103MD | Ceramic, 0.01μF, 50V, ±20% |
| C109, 110 | | **ECEA1CS330** | Electrolytic, 33μF, 16V |
| C111, 112 | | ECQM1H103JZ | Polyester, 0.01μF, 50V, ±5% |
| C113, 114 | | ECQM1H272JZ | Polyester, 0.0027μF, 50V, ±5% |
| C115, 116 | | **ECEA50Z1** | Electrolytic, 1μF, 50V |
| C117, 118 | | **ECEA1ES101** | Electrolytic, 100μF, 25V |
| C119 | | ECKD1H103ZF | Ceramic, 0.01μF, 50V, +80 −20 % |
| C201, 202 | | ECKD1H331KB | Ceramic, 330pF, 50V, ±10% |
| C205, 206 | | ECQM1H563KZ | Polyester, 0.056μF, 50V, ±10% |
| C301, 302 | | **ECEA50M3R3R** | Electrolytic, 3.3μF, 50V |
| C303, 304 | | ECCD1H390K | Ceramic, 39pF, 50V, ±10% |
| C305, 306 | | ECCD1H820K | Ceramic, 82pF, 50V, ±10% |
| C307, 308 | | **ECEA1CS330** | Electrolytic, 33μF, 16V |
| C309, 310 | | ECQM1H272KZ | Polyester, 0.0027μF, 50V, ±10% |
| C311, 312 | | ECQM1H223KZ | Polyester, 0.022μF, 50V, ±10% |
| C313, 314 | | ECQM1H183KZ | Polyester, 0.018μF, 50V, ±10% |
| C315, 316 | | ECQM1H104KZ | Polyester, 0.1μF, 50V, ±10% |
| C317, 318 | | **ECEA1HS100** | Electrolytic, 10μF, 50V |
| C319, 320 | | ECCD1H020C | Ceramic, 2pF, 50V ±0.25pF |
| C321, 322 | | ECCD1H150K | Ceramic, 15pF, 50V, ±10% |
| C323, 324 | | ECCD1H330K | Ceramic, 33pF, 50V, ±10% |
| C325, 326 | | ECKD1H471KB | Ceramic, 470pF, 50V, ±10% |
| C327, 328 | | ECKD1H152KB | Ceramic, 0.015μF, 50V, ±10% |
| C329, 330 | | ECKD1H471KB | Ceramic, 470pF, 50V, ±10% |
| C331, 332 | | ECCD1H330K | Ceramic, 33pF, 50V, ±10% |
| C333, 334 | | ECCD1H101K | Ceramic, 100pF, 50V, ±10% |
| C335, 336 | | **ECEA1HS470** | Electrolytic, 47μF, 50V |
| C337, 338 | ⚠ | ECEA1EN3R3S | Non-polar Electrolytic, 3.3μF, 25V |
| C339, 340 | | ECCD1H101K | Ceramic, 100pF, 50V, ±10% |
| C341, 342 | | ECQM1H473KZ | Polyester, 0.047μF, 50V, ±10% |
| C343 | | **ECEA1HS101** | Electrolytic, 100μF, 50V |
| C401 | | ECKD1H103ZF | Ceramic, 0.01μF, 50V, +80 −20 % |
| C402, 403 | | **ECEA1HS470** | Electrolytic, 47μF, 50V |
| C404 | | **ECEA1JS330** | Electrolytic, 33μF, 63V |
| C405 | | **ECEA50Z3R3** | Electrolytic, 3.3μF, 50V |
| C406 | | **ECEA2AS100** | Electrolytic, 10μF, 100V |
| C407, 408 | | ECETS45V682U | Electrolytic, 6800μF, 45V |
| C501, 502 | | **ECEA50ZR47** | Electrolytic, 0.47μF, 50V |
| C503, 504 | | **ECEA50Z4R7** | Electrolytic, 4.7μF, 50V |
| C505 | | **ECEA1VS330** | Electrolytic, 33μF, 35V |
| C506 | | **ECEA50Z1** | Electrolytic, 1μF, 50V |
| C507 | | ECKD1H103ZF | Ceramic, 0.01μF, 50V, +80 −20 % |
| C508, 509 | | ECKD1H103ZF | Ceramic, 0.01μF, 50V, +80 −20 % |



# ■ REPLACEMENT PARTS LIST ·····Cabinet and Chassis Parts

**Notes:** 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. ⓚ -marked parts are used for black only, while ○-marked parts are for silver type only.
4. Parts other than ⓚ - and ○-marked are used for both black and silver types.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Black type model No.: SU-Z11(K)

| Ref. No. | | Part No. | Part Name & Description |
|---|---|---|---|
| **CABINET & CHASSIS PARTS** | | | |
| **1** | ○ | SYW379 | Panel, Front Ass'y |
| **1** | ⓚ | SYW379–1 | Panel, Front Ass'y (Black) |
| 2 | | SHP9341 | Ornament, Volume Control |
| 3 | | SHP9327 | Ornament, Balance Control |
| 4 | | SHP9343 | Ornament, Bass, Treble Control |
| 5 | | SBC307–1 | Button, Power |
| 6 | | SBC339 | Button, Speaker/Rec mode/Tape monitor Selector |
| 7 | | SBC367 | Button, Range/Loudness |
| 8 | | SBN1019 | Knob, Bass/Treble/Balance |
| 9 | | SBC365 | Button, Input Selector |
| 10 | | SBN1021 | Knob, Volume Control |
| 11 | | SMP303 | Holder, LED (D501~511) |
| 12 | | XCJ6P21B–A1 | Jack, Headphones |
| 13 | | SHG619 | Cushion, Display Window |
| 14 | | SHS1009 | Sheet, Front Panel |
| 15 | | SUW1807 | Spacer, Front Frame |
| 16 | | SGU213 | Transparent Cover |
| 17 | | SGX7035 | Ornament, Display |
| 18 | | SHG1509 | Cushion, Rubber |
| **19** | ○ | SDU65 | Filter, Display Window |
| **19** | ⓚ | SDU65–1 | Filter, Display Window |
| 20 | | SJF4813–1 | Terminal, Speakers |
| 21 | | SJF3045–9N | Terminal, Input |
| 22 | | SHS2437 | Fiber, Right Side Chassis |
| 23 | | SKL245 | Foot |
| **24** [E] | | SGP2650A | Rear Panel |
| **24** [EK,EG,EH, EF,EB] | | SGP2650C | Rear Panel |
| **24** [XA] | | SGP2650–2A | Rear Panel |
| **24** [XL] | | SGPUZ11XL | Rear Panel SGP2650–3A with Name Plate (SGT23850) |
| **25** | ○ | SKC750S1 | Cabinet |
| **25** | ⓚ | SKC750B1 | Cabinet (Black) |
| **26** [E,EG,EH EB,EF] | ⚠ | **SJA88** | AC Cord |
| **26** [EK] | ⚠ | **QFC1205M** | AC Cord |
| **26** [XA] | ⚠ | SJA111 | AC Cord |
| **26** [XL] | ⚠ | **QFC1207MA** | AC Cord |
| **27** | | SHR127 | Bushing, AC Cord |
| **27** [EK] | | SHR129 | Bushing, AC Cord |
| **27** [XL] | | SHR131 | Bushing, AC Cord |
| 28 [XA] only | ⚠ | SJS601–1 | Socket, AC Outlet |
| **29** | | SJS5707 | Connector 7 Pin |
| **29** | | SJS5519 | Connector 5 Pin |
| **29** | | SJS5711 | Connector 7 Pin |
| **SCREWS, WASHERS and NUTS** | | | |
| N1 | | **XTB3+8BFN** | Screw, Tapping ⊕ 3x8 |
| **N2** | ○ | **XTB4+8BFN** | Screw, Tapping ⊕ 4x8 |
| **N2** | ⓚ | **XTB4+8BFZ** | Screw, Tapping ⊕ 4x8 |
| N3 | | **XTB4+10BFZ** | Screw, Tapping ⊕ 4x10 |
| N4 | | SNE4021 | Nut |
| N5 | | **XNS12** | Nut |
| N6 | | **XTB3+8BFZ** | Screw, Tapping ⊕ 3x8 |
| N7 | | **XTV3+8BFN** | Screw, Tapping ⊕ 3x8 |
| N8 | | XTNS3+C6–1S | Screw, Tapping ⊕ 3x6 |
| N9 | | **XWC3B** | Washer |
| **PACKING PARTS** | | | |
| **P1** [E,EG, EH, EB] | ○ | SPG2959 | Carton Box |
| **P1** [E,EG,EH] | ⓚ | SPG2967 | Carton Box (Black) |
| **P1** [EF] | | SPG2989 | Carton Box |
| **P1** [EK] | | SPG2961 | Carton Box |
| **P1** [XA] | | SPG2963 | Carton Box |
| **P1** [XL] | | SPG2965 | Carton Box |
| **P2** | | SPS3073 | Pad, Left Side |
| **P2** [XL] only | | SPS3073–1 | Pad, Left Side |
| **P3** | | SPS3075 | Pad, Right Side |
| **P3** [XL] only | | SPS3075–1 | Pad, Right Side |
| P4 | | SPP649 | Polyethylene Bag |
| **ACCESSORIES** | | | |
| A1 [XA] only | | SJP5213–1 | Plug Adapter, AC Power |
| A2 [XA] only | | SJP5215 | Plug Adapter, AC Power |
| **A3** [E,EG,EH, EB,EF] | | SQF20333 | Instructions Book, Printed Matter |
| **A3** [XL] | | SQF20335 | Instructions Book, Printed Matter |
| **A3** [EK,XA] | | SQF20337 | Instructions Book, Printed Matter |

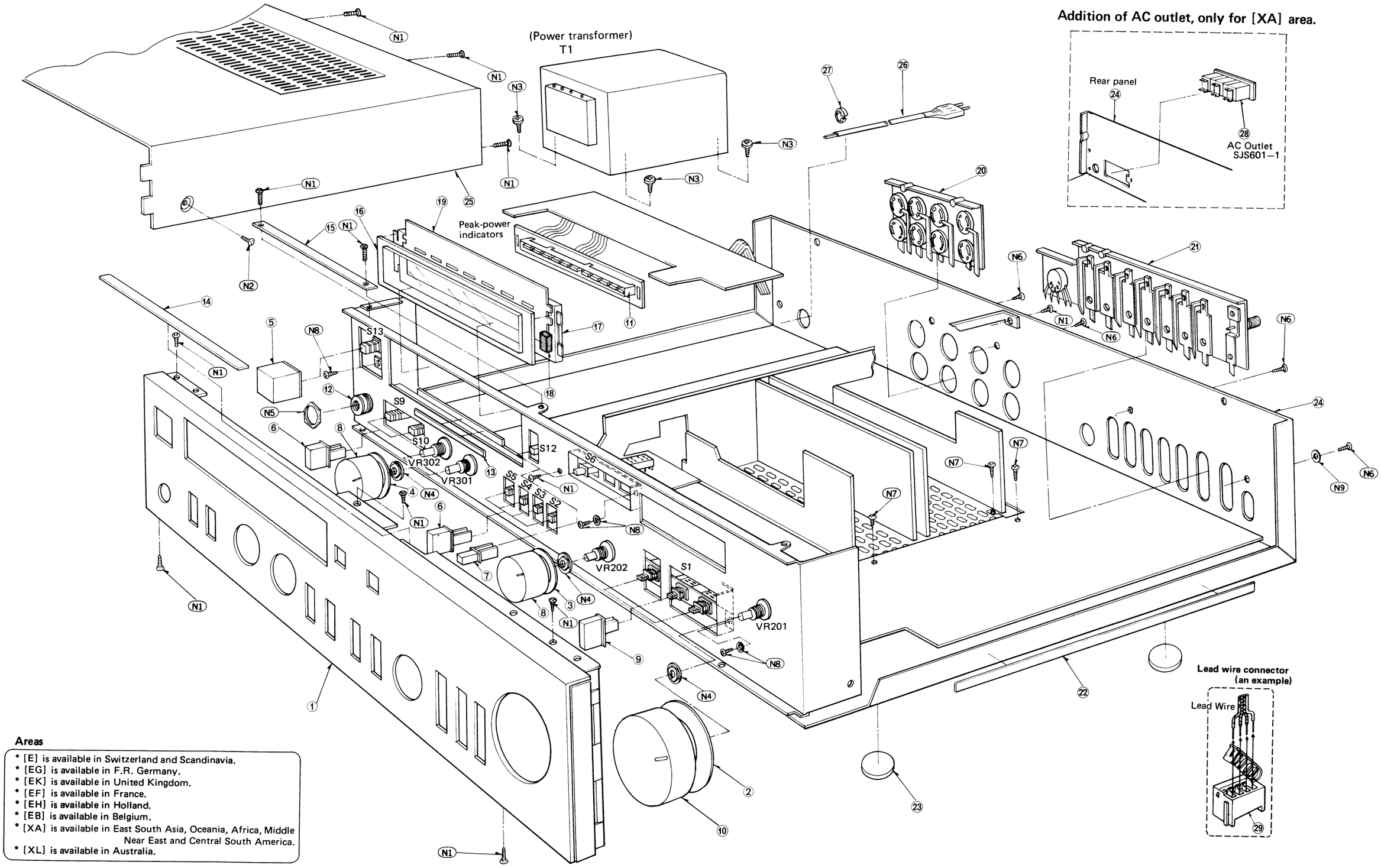


■ EXPLODED

**Areas**

* [E] is available in Switzerla
* [EG] is available in F.R. G
* [EK] is available in United
* [EF] is available in France
* [EH] is available in Hollan
* [EB] is available in Belgiu
* [XA] is available in East S Nea
* [XL] is available in Austra

## ■ EXPLODED VIEW




**Areas**

* [E] is available in Switzerland and Scandinavia.
* [EG] is available in F.R. Germany.
* [EK] is available in United Kingdom.
* [EF] is available in France.
* [EH] is available in Holland.
* [EB] is available in Belgium.
* [XA] is available in East South Asia, Oceania, Africa, Middle Near East and Central South America.
* [XL] is available in Australia.



Printed in Japan
81038500 ⊗ YK/YW